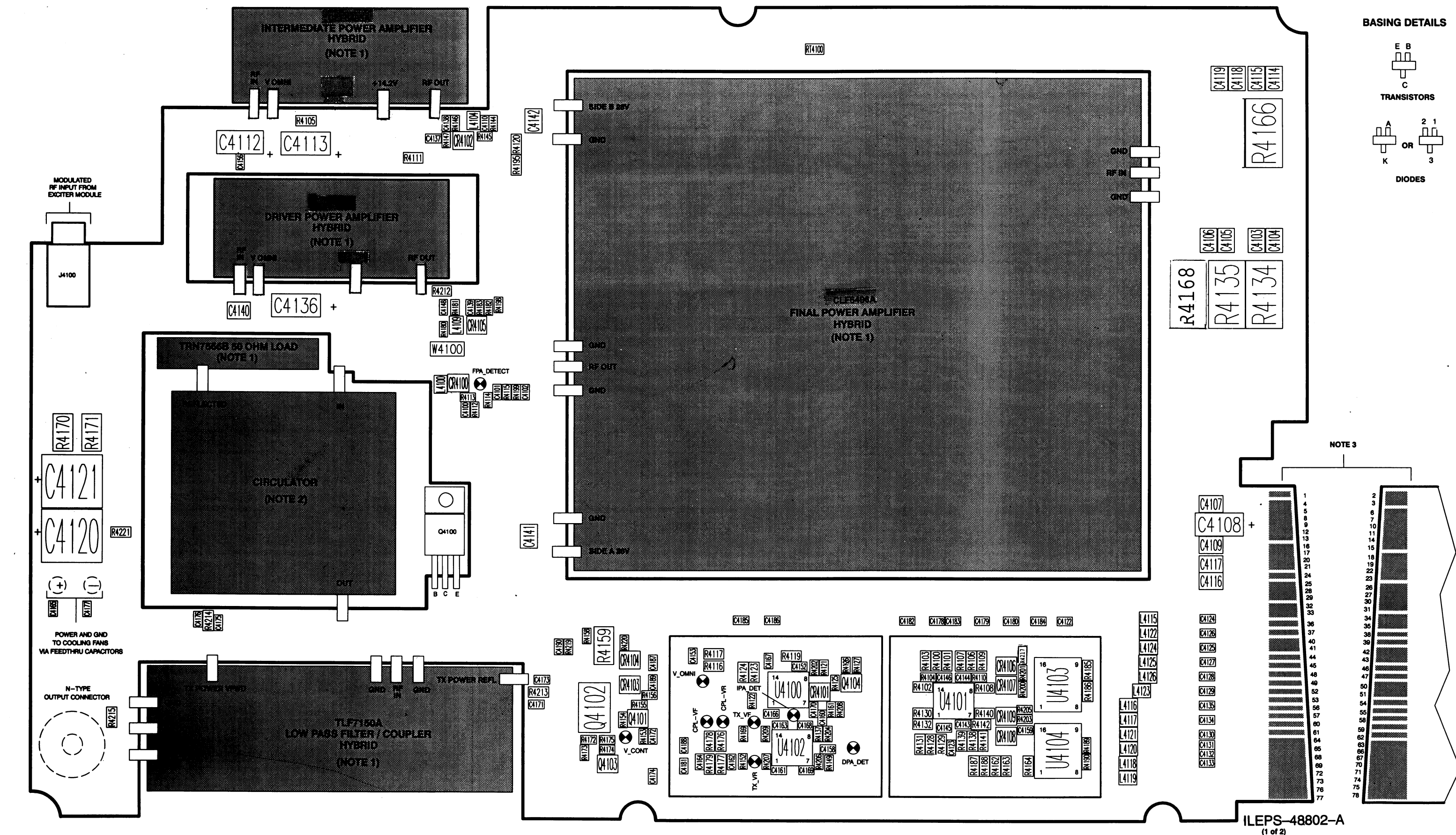


100W 900 MHz POWER AMPLIFIER MODULE
MODEL CTF1092A



NOTES:

- 1) CLF6496A, CLF6485A, TLF7150A, CTF6348A and TRN7566B ARE HYBRIDS AND ARE CONSIDERED NON-REPAIRABLE. REPAIR IS BY REPLACEMENT OF ENTIRE HYBRID.
- 2) THE MOTOROLA PART NUMBER FOR THE CIRCULATOR IS 5884911T06.
- 3) THE CIRCUIT BOARD EDGE CONNECTOR HAS PRINTED CIRCUIT PLATED CONTACTS ON BOTH SIDES OF THE BOARD EDGE. SEE THE FOLLOWING TABLE FOR EDGE CONNECTOR PIN NUMBERING/SIGNAL NAME CROSS-REFERENCE.

PIN NUMBER	SIGNAL NAME	PIN NUMBER	SIGNAL NAME
1	GND	40	GND
2	GND	41	GND
3	GND	42	GND
4	+28V	43	GND
5	+28V	44	NOT USED
6	+28V	45	NOT USED
7	+28V	46	NOT USED
8	+28V	47	NOT USED
9	+28V	48	FAN ON
10	+28V	49	GND
11	+28V	50	GND
12	+28V	51	GND
13	+28V	52	X1 MUX (NOT USED)
14	+28V	53	Y1 MUX (NOT USED)
15	+28V	54	X2 MUX
16	+14.2V	55	Y2 MUX
17	+14.2V	56	X3 MUX
18	+14.2V	57	Y3 MUX
19	+14.2V	58	A MUX CTRL
20	+14.2V	59	B MUX CTRL
21	+14.2V	60	SPARE 1
22	+14.2V	61	SPARE 2
23	+14.2V	62	SPARE 3
24	+5V	63	GND
25	GND	64	GND
26	GND	65	GND
27	GND	66	GND
28	GND	67	GND
29	GND	68	GND
30	GND	69	GND
31	GND	70	GND
32	VCTRL	71	GND
33	VCTRL	72	GND
34	VCTRL	73	GND
35	VCTRL	74	GND
36	TX VF 1	75	GND
37	PA TEMP 1 (NOT USED)	76	GND
38	DRIVER FWD (NOT USED)	77	GND
39	TX VR 1 (NOT USED)	78	GND

ILEPS-48802-A
(2 OF 2)

parts list

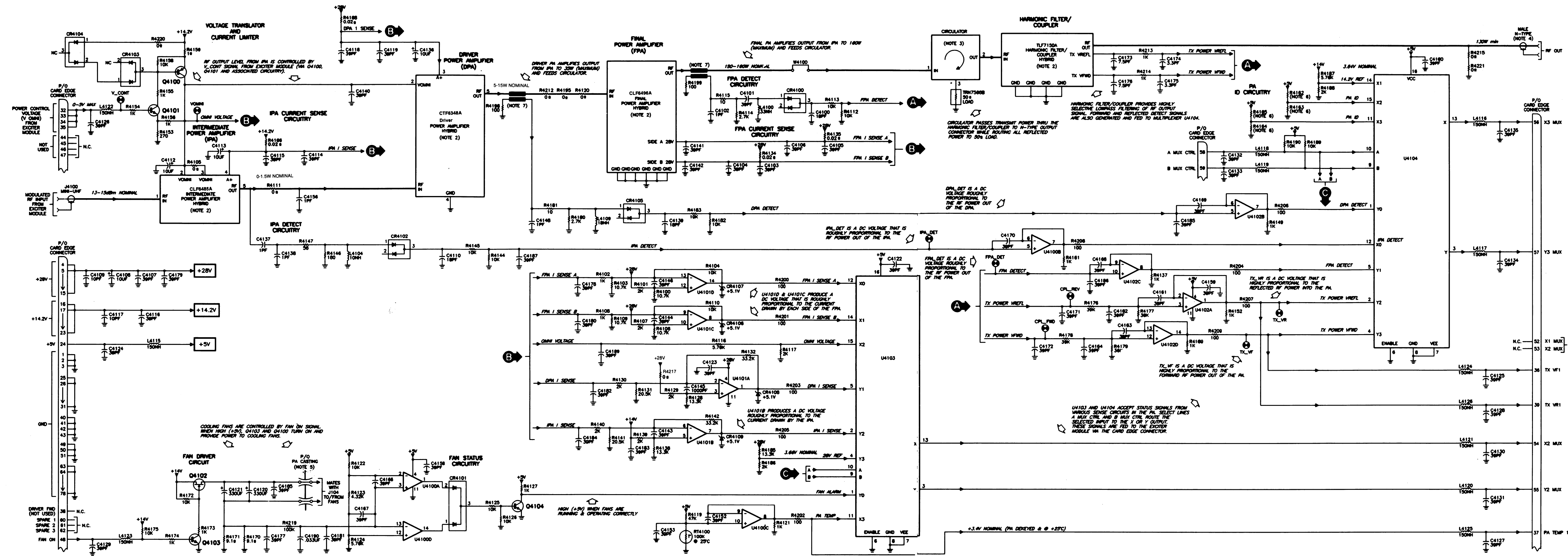
CTF6347A RF/DC Distribution Board (900 MHz 100W PA) PL-13083-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C4100	2113740A35	capacitor, fixed: 18 pF, ±5%, 50 V
C4101	2113740A43	39 pF, ±5%, 50 V
C4102	2113740G03	1 pF, ±0.1 pF, 50 V
C4103 thru 4107	2111078B32	39 pF, ±5%, 100V
C4108	2311048A45	10 uF, ±10%, 35 V
C4109	2111078B13	10 pF, ±0.5 pF, 100 V
C4110	2113740A35	18 pF, ±5%, 50 V
C4112,4113	2311048A45	10 uF, ±10%, 35 V
C4114 thru 4116	2111078B32	39 pF, ±5%, 100V
C4118,4119	2111078B13	10 pF, ±0.5 pF, 100 V
C4120,4121	2380090M27	330 uF, ±20%, 16 V
C4122 thru 4135	2113740A43	39 pF, ±5%, 50 V
C4136	2311048A45	10 uF, ±10%, 35 V
C4137,4138	2113740G03	1 pF, ±0.1 pF, 50 V
C4139	2113740A35	18 pF, ±5%, 50 V
C4140 thru 4142	2111078B32	39 pF, ±5%, 100V
C4143 thru 4146	2113740A43	39 pF, ±5%, 50 V
C4148	2113740G03	1 pF, ±0.1 pF, 50 V
C4152,4153	2113740A43	39 pF, ±5%, 50 V
C4156	2113740G03	1 pF, ±0.1 pF, 50 V
C4158 thru 4172	2113740A43	39 pF, ±5%, 50 V
C4173	2113740A25	7.54 pF, ±0.25 pF, 50V
C4174,4175	2113740G15	3.3 pF, ±0.1 pF, 50 V
C4176	2113740A25	7.54 pF, ±0.25 pF, 50V
C4177 thru 4189	2113740A43	39 pF, ±5%, 50 V
C4190	2113741A57	0.033 uF, ±5%, 50 V
CR4100	4882290T04	diode (see note): Dual Diode, hot carrier
CR4101	4813833C02	Dual Diode, common cathode
CR4102	4882290T04	Diode, hot carrier dual 70 V
CR4103,4104	4813833C05	Dual Diode, hot carrier
CR4105	4882290T04	Diode, hot carrier
CR4106 thru 4109	4813830A14	Zener, 5.1 V
J4100	0984393T01	connector: receptacle: uhf
L4100	2462587N47	coil: CHIP IND 33 NH 5%
L4104	2462587N41	10 nH, ±5%
L4109	2462587N44	18 nH, ±5%
L4115 thru 4126	2462587N55	150 nH, ±5%
Q4100	4813822D07	TSTR PNP 90V 10A MJF2955
Q4101	4813824A10	NPN
Q4102	4813821A09	TSTR P-CH 80V 12A _2955_
Q4103,4104	4813824A10	NPN
R4100	0611077F94	resistor, fixed: 10.7K, ±1%, 1/8 W
R4101	0611077F24	2K, ±1%, 1/8 W
R4102	0611077E94	1K, ±1%, 1/8 W
R4103	0611077F94	10.7K, ±1%, 1/8 W
R4104	0611079G01	10K, 1/10 W, ±1%
R4105	0611077A01	0 ohm, ±5%, 0 W
R4106	0611077F94	10.7K, ±1%, 1/8 W
R4107	0611077F24	2K, ±1%, 1/8 W
R4108	0611077E94	1K, ±1%, 1/8 W
R4109	0611079G01	10.7K, ±1%, 1/8 W
R4110	0611077A01	0 ohm, ±5%, 0 W
R4112,4113	0611079G01	10K, 1/10 W, ±1%
R4114	0611079A84	2700 ohms, ±5%, 1/10 W
R4115	0611079A26	10 ohms, ±5%, 1/10 W
R4116	0611077F68	5.78K, ±1%, 1/8 W
R4117	0611077F24	2K, ±1%, 1/8 W
R4118	0611077B15	47K, ±5%, 1/8 W
R4119	0611077B15	47K, ±5%, 1/8 W
R4120	0611077A01	0 ohm, ±5%, 0 W
R4121	0611079A74	1K, ±5%, 1/10 W
R4122	0611079G01	10K, 1/10 W, ±1%
R4123	0611077F56	4.32K, ±1%, 1/8 W
R4124	0611077F68	5.78K, ±1%, 1/8 W
R4125,4126	0611079G01	10K, 1/10 W, ±1%
R4127	0611079A74	1K, ±5%, 1/10 W
R4128	0611077G04	13.3K, ±1%, 1/8 W
R4129,4130	0611077F24	2K, ±1%, 1/8 W
R4131	0611077G22	20.5K, ±1%, 1/8 W
R4132	0611077G42	33.2K, ±1%, 1/8 W
R4134,4135	0682089V02	SMT RES .02 OHM 5% 2W
R4137	0611079A74	1K, ±5%, 1/10 W
R4138	0611077G04	13.3K, ±1%, 1/8 W
R4139,4140	0611077F24	2K, ±1%, 1/8 W
R4141	0611077G22	20.5K, ±1%, 1/8 W
R4142	0611077G42	33.2K, ±1%, 1/8 W
R4144,4145	0611079G01	10K, 1/10 W, ±1%
R4146	0611079A58	180 ohms, ±5%, 1/10 W
R4147	0611079A44	56 ohms, ±5%, 1/10 W
R4149	0611079A74	1K, ±5%, 1/10 W
R4152	0611079A74	1K, ±5%, 1/10 W
R4153	0611079A60	270 ohms, ±5%, 1/10 W
R4154 thru 4156	0611079A74	1K, ±5%, 1/10 W
R4158	0611079G01	10K, 1/10 W, ±1%
R4159	0683622T01	1 ohm, ±5%, 1 W
R4161	0611079A74	1K, ±5%, 1/10 W
R4162	0611077G22	20.5K, ±1%, 1/8 W
R4163	0611077F91	10K, ±1%, 1/8 W
R4164	0611077E94	1K, ±1%, 1/8 W
R4166,4168	0682089V02	SMT RES .02 OHM 5% 2W
R4169	0611079A74	1K, ±5%, 1/10 W
R4170,4171	0683622T24	9.1 ohms, ±5%, 1 W
R4172	0611079G01	10K, 1/10 W, ±1%
R4173,4174	0611079A74	1K, ±5%, 1/10 W
R4175	0611079G01	10K, 1/10 W, ±1%
R4176	0611077G49	39.2K, ±1%, 1/8 W
R4177	0611077G46	36.5K, ±1%, 1/8W
R4178	0611077G49	39.2K, ±1%, 1/8 W
R4179	0611077G46	36.5K, ±1%, 1/8W
R4180	0611079A84	2700 ohms, ±5%, 1/10 W
R4181	0611079A26	10 ohms, ±5%, 1/10 W
R4182,4183	0611079G01	10K, 1/10 W, ±1%
R4185	0611077G04	13.3K, ±1%, 1/8 W
R4186	0611077F24	2K, ±1%, 1/8 W
R4187	0611077F68	5.78K, ±1%, 1/8 W
R4188	0611077F24	2K, ±1%, 1/8 W
R4189,4190	0611079G01	10K, 1/10 W, ±1%
R4195	0611077A01	0 ohm, ±5%, 0 W
R4196 thru 4209	0611079A50	100 ohms, ±5%, 1/10 W
R4212	0611077A01	0 ohm, ±5%, 0 W
R4213,4214	0611077E94	1K, ±1%, 1/8 W
R4215	0611077A01	0 ohm, ±5%, 0 W
R4217	0611079A01	0 ohms, ±5%, 1/10 W
R4219	0611079B23	100K, ±5%, 1/10 W
R4220	0611079A01	0 ohms, ±5%, 1/10 W
R4221	0611077A01	0 ohm, ±5%, 0 W
RT4100	0680149M02	thermistors: 100K, ±10%, 240 MW
U4100 thru 4102	5113819A05	Integrated circuit (see note): High Performance, Single Supply
U4103,4104	5113805A84	Max/Demux, Dual 4-Channel Analog cable assembly:
W4100	428050F001	cable assembly: SMT ZERO OHM MELF
	1584753T02	non-referenced items: Housing (used with E4100)
	1584753T02	Housing (used with E4101)
	1585034U03	COVER, Shield (used with E4100)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R4120	0611077A01	0 ohm, ±5%, 0 W
R4121	0611079A74	1K, ±5%, 1/10 W
R4122	0611079G01	10K, 1/10 W, ±1%
R4123	0611077F56	4.32K, ±1%, 1/8 W
R4124	0611077F68	5.78K, ±1%, 1/8 W
R4125,4126	0611079G01	10K, 1/10 W, ±1%
R4127	0611079A74	1K, ±5%, 1/10 W
R4128	0611077G04	13.3K, ±1%, 1/8 W
R4129,4130	0611077F24	2K, ±1%, 1/8 W
R4131	0611077G22	20.5K, ±1%, 1/8 W
R4132	0611077G42	33.2K, ±1%, 1/8 W
R4134,4135	0682089V02	SMT RES .02 OHM 5% 2W
R4137	0611079A74	1K, ±5%, 1/10 W
R4138	0611077G04	13.3K, ±1%, 1/8 W
R4139,4140	0611077F24	2K, ±1%, 1/8 W
R4141	0611077G22	20.5K, ±1%, 1/8 W
R4142	0611077G42	33.2K, ±1%, 1/8 W
R4144,4145	0611079G01	10K, 1/10 W, ±1%
R4146	0611079A58	180 ohms, ±5%, 1/10 W
R4147	0611079A44	56 ohms, ±5%, 1/10 W
R4149	0611079A74	1K, ±5%, 1/10 W
R4152	0611079A74	1K, ±5%, 1/10 W
R4153	0611079A60	270 ohms, ±5%, 1/10 W
R4154 thru 4156	0611079A74	1K, ±5%, 1/10 W
R4158	0611079G01	10K, 1/10 W, ±1%
R4159	0683622T01	1 ohm, ±5%, 1 W
R4161	0611079A74	1K, ±5%, 1/10 W
R4162	0611077G22	20.5K, ±1%, 1/8 W
R4163	0611077F91	10K, ±1%, 1/8 W
R4164	0611077E94	1K, ±1%, 1/8 W
R4166,4168	0682089V02	SMT RES .02 OHM 5% 2W
R4169	0611079A74	1K, ±5%, 1/10 W
R4170,4171	0683622T24	9.1 ohms, ±5%, 1 W
R4172	0611079G01	10K, 1/10 W, ±1%
R4173,4174	0611079A74	1K, ±5%, 1/10 W
R4175	0611079G01	10K, 1/10 W, ±1%
R4176	0611077G49	39.2K, ±1%, 1/8 W
R4177	0611077G46	36.5K, ±1%, 1/8W
R4178	0611077G49	39.2K, ±1%, 1/8 W
R4179	0611077G46	36.5K, ±1%, 1/8W
R4180	0611079A84	2700 ohms, ±5%, 1/10 W
R4181	0611079A26	10 ohms, ±5%, 1/10 W
R4182,4183	0611079G01	10K, 1/10 W, ±1%
R4185	0611077G04	13.3K, ±1%, 1/8 W
R4186	0611077F24	2K, ±1%, 1/8 W
R4187	0611077F68	5.78K, ±1%, 1/8 W
R4188	0611077F24	2K, ±1%, 1/8 W
R4189,4190	0611079G01	10K, 1/10 W, ±1%
R4195	0611077A01	0 ohm, ±5%, 0 W
R4196 thru 4209	0611079A50	100 ohms, ±5%, 1/10 W
R4212	0611077A01	0 ohm, ±5%, 0 W
R4213,4214	0611077E94	1K, ±1%, 1/8 W
R4215	0611077A01	0 ohm, ±5%, 0 W
R4217	0611079A01	0 ohms, ±5%, 1/10 W
R4219	0611079B23	100K, ±5%, 1/10 W
R4220	0611079A01	0 ohms, ±5%, 1/10 W
R4221	0611077A01	0 ohm, ±5%, 0 W
RT4100	0680149M02	thermistors: 100K, ±10%, 240 MW
U4100 thru 4102	5113819A05	Integrated circuit (see note): High Performance, Single Supply
U4103,4104	5113805A84	Max/Demux, Dual 4-Channel Analog cable assembly:
W4100	428050F001	cable assembly: SMT ZERO OHM MELF
	1584753T02	non-referenced items: Housing (used with E4100)
	1584753T02	Housing (used with E4101)
	1585034U03	COVER, Shield (used with E4100)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
	1585034U03	COVER, Shield (used with E4101)
	5483665R01	Label, bar code: 1/4" wide, white
	5484960T01	Label, barcode: 6.3 x 12.7MM, white
	8482219W07	CIRCUIT BOARD
note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.		
CLF6502A, 900 MHz 100W PA Hardware PL-13084-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
non-referenced items:		
	0185181U01	ASSEM PA COOLING FANS
	0211996A02	NUT HEX 3/8 x 24 x 1/2 x 3/32
	0310907A28	Screw, Tapping: m3.5 x 0.6 x 10 (7 used)
	0310943J09	Screw, Tapping: TT3 x 5 x 8 (21 used)
	0310943J10	Screw, Tapping: TT3 x 5 x 8 (9 used)
	0310943J15	Screw, Tapping: (2 used)
	0312016A32	SCRTPG TT3.5X.6X18 STRPNSTLZNC (8 used)
	0400007691	WASHER, lock: 3/8", int. tooth (2 used)
	0900616159	CONNECTOR, receptacle: coaxial
	1585002U02	COVER High Band PA
	2182805H05	1000 pF, ±0%; 200V (2 used)
	2682318W06	HEATSINK HB PA
	3282796H05	GASKET, RFI: .094 x .094" (35.8 used)
	5482624Y01	Label, PCB barcode
	5482006W02	RIBBON, thermal XFER (0.00002 used)
CLF6496A Final PA Hybrid PL-13085-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.		
CLF6485A Intermediate PA Hybrid PL-13086-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.		
TLF7150A Low Pass Filter/Coupler Hybrid PL-13087-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.		
CTF6348A Driver PA Hybrid PL-13088-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.		
TRN7566B Circulator 50Q Load PL-13074-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
This hybrid contains non-serviceable parts. If the hybrid is malfunctioning, replace the entire hybrid module.		

100W 900 MHz POWER AMPLIFIER MODULE
MODEL CTF1092A



- NOTES:
- UNLESS OTHERWISE INDICATED, ALL RESISTOR VALUES ARE IN OHMS. CAPACITOR VALUES ARE IN MICROFARADS AND INDUCTOR VALUES ARE IN MILLIHENRIES.
 - CLF8485A IPA, CLF8485A FPA, CTF8348A DPA, AND TL7150 LOW-PASS FILTER/COUPLER ARE HYBRIDS AND ARE CONSIDERED NON-REPAIRABLE. REPAIR IS BY REPLACEMENT OF ENTIRE HYBRID.
 - THE MOTOROLA PART NUMBER FOR THE CIRCULATOR IS 5884011106.
 - THE N-TYPE OUTPUT CONNECTOR (0800818159, P/O TRN7908A HARDWARE) IS SOLDERED ONTO THE REVERSE SIDE OF THE RF/DC DISTRIBUTION BOARD.
 - CONNECTIONS TO THE COOLING FANS ARE MADE VIA FEEDTHRU CAPACITORS (1000PF, P/O TRN7908A HARDWARE).
 - RESISTORS R4162 THRU R4185 COMPRISE A "RESISTOR ROM" WHICH IDENTIFIES THE BAND, RANGE AND OUTPUT POWER OF THE PARTICULAR PA MODULE. THE RESISTORS ARE PLACED AS SHOWN IN THE TABLE BELOW.
 - FPA/DPA DETECT CIRCUITRY ACCEPT SAMPLES OF FPA/DPA OUTPUTS VIA MICROSTRIP COUPLERS.

MODEL	R4162	R4163	R4164	R4165
CTF1092A (900 MHz)	20.5K	10K	1K	NOT PLACED

INTEGRATED CIRCUIT POWER AND GROUND CONNECTIONS				
REF. DESIG.	TYPE	DESCRIPTION	SUPPLY PIN	GROUND PIN
U4100	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4101	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4102	MC33074	HIGH PERFORMANCE OPERATIONAL AMPLIFIER	4	11
U4103	74HC4052	ANALOG MULTIPLEXER/DEMULTIPLEXER	16	8
U4104	74HC4052	ANALOG MULTIPLEXER/DEMULTIPLEXER	16	8



FLEPS-48801-A